



PTO/SB/08a (08-03)

Approved for use through 07/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 4

Complete if Known

Application Number	10/809,269
Filing Date	03/24/2004
First Named Inventor	Ian G. Brown
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	IB-1888

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)				
/WHB/	AA	US-	RE37,977 E	02/04/2003	Sugihara et al.	
	AB	US-	6,511,817 B1	01/28/2003	Lynch et al.	
	AC	US-	6,448,089 B1	09/10/2002	Vuong	
	AD	US-	6,297,025 B1	10/02/2001	Sugihara et al.	
	AE	US-	6,277,629 B1	08/21/2001	Wolf et al.	
	AF	US-	6,258,229 B1	07/10/2001	Winarta et al.	
	AG	US-	6,151,519 A	11/21/2000	Sugihara et al.	
	AH	US-	6,132,663 A	10/17/2000	Sugihara, et al.	
	AI	US-	6,132,683 A	10/03/2000	Howard III, et al.	
	AJ	US-	6,051,422 A	04/18/2000	Kovacs et al.	
	AK	US-	5,981,268 A	11/09/1999	Kovacs et al.	
	AL	US-	5,810,725 A	09/22/1998	Sugihara, et al.	
↓	AM	US-	5,810,725 A	08/22/1998	Sugihara et al.	
	AN	US-	5,692,516 A	12/07/1997	Kaneko et al.	
/WHB/	AO	US-	5,563,067 A	10/08/1996	Sugihara et al.	
		US-				
		US-				
		US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner
Signature

/William Beisner/

Date
Considered

/William Beisner/

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	10/809,269		
		Filing Date	03/24/2004		
		First Named Inventor	Ian G. Brown		
		Art Unit	Not Yet Assigned		
		Examiner Name	Not Yet Assigned		
Sheet	2	of	4	Attorney Docket Number	IB-1888

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/WHB/	AP	JEROME PINE, "Recording action potentials from cultured neurons with extracellular microcircuit electrodes," J. Neurosci Methods, Vol. 2, p. 19-31, (1980).	
	AQ	M.A. OZHOGHIN ET AL., "Active multimicroelectrodes for neurophysiological measurements," Proc. of the 5th Nordic Mtg. on Bed. and Biol. Eng., Linkoping, and the 25th Anniversary Swedish Soc. for Med. Physics and Med. Eng., Umea 1981, Vol. 1, p. 158-160, (1981).	
	AR	JAMES L. NOVAK ET AL., "Recording from the Aplysia Abdominal Ganglion with a Planar Microelectrode Array," IEEE Transactions on Biomed. Eng., Vol. 33 (No. 2), p. 196-202, (February 1986).	
	AS	NECHAMA LASSER-ROSS ET AL., "High time resolution fluorescence imaging with a CCD camera," J. Neurosci. Methods, Elsevier Science Publishers B.V., Vol. 36, p. 253-261, (1991).	
	AT	CHI-BIN CHIEN ET AL., "An apparatus for recording synaptic potentials from neuronal cultures using voltage-sensitive fluorescent dyes," J. Neurosci. Methods, Elsevier Science Publishers B.V., Vol. 38, p. 93-105, (1991).	
	AU	LUO LU ET AL., "Diamond-like carbon as biological compatible material for cell culture and medical application," Bio-Med. Materials and Engineering, Elsevier Science, Vol. 3 (No. 4), p. 223-228, (1993).	
	AV	STEVE M. POTTER ET AL., "High-speed CCD movie camera with random pixel selection, for neurobiology research," Proc. SPIE, 22nd Int'l. Congress on High-Speed Photography and Photonics, Vol. 2869, p. 243-253, (May 1997).	
	AW	M.J. IGNATIUS ET AL., "Bioactive surface coatings for nanoscale instruments," J. Biomed. Mater. Research, Vol. 40 (No. 2), p. 264-274, (1998).	
↓	AX	JUERGEN RUEHE ET AL., "Tailoring of surfaces with ultrathin polymer films for survival and growth of neurons in culture," J. Biomater. Sci. Polymer Edn., Vol. 10 (No. 8), p. 859-874, (1999).	
/WHB/	AY	B.V. SARADA ET AL., "Electrochemical Characterization of Highly Boron-Doped Diamond Microelectrodes in Aqueous Electrolyte," Journal of the Electrochemical Society, The Electrochemical Society, Inc., Vol. 146 (No. 4), p. 1469-1471, (1999).	

Examiner Signature	/William Beisner/	Date Considered	10/15/2007
--------------------	-------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known			
				Application Number	10/809,269		
				Filing Date	03/24/2004		
				First Named Inventor	Ian G. Brown		
				Art Unit	Not Yet Assigned		
				Examiner Name	Not Yet Assigned		
Sheet	3	2	of	4	3	Attorney Docket Number	IB-1888

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/WHB/	AZ	F. MAMMANO ET AL., "An optical recording system based on a fast CCD sensor for biological imaging," Cell Calcium, Harcourt Brace & Co. Ltd, Vol. 25 (No. 2), p. 115-123, (1999).	
	BA	G. SCHMITT ET AL., "Passivation and corrosion of microelectrode arrays," Electrochimica Acta, Pergamon, Vol. 44, p. 3865-3883, (1999).	
	BB	MICHAEL J. SCHOENING, "Silicon recognizes biochemical parameters: Microchips for analytical sensor applications," American Laboratory, Vol. 32 (No. 18), p. 24-31, (September 2000).	
	BC	B. HORWITZ ET AL., "Neural modeling and functional brain imaging: an overview," Neural Networks, Pergamon, Vol. 13, p. 829-846, (2000).	
	BD	STEVEN R. YOUNG ET AL., "Simultaneous intracellular recording and calcium imaging in single neurons of Hippocampal Slices," Methods, Academic Press, Vol. 21, p. 373-383, (2000).	
	BE	TIMOTHY D. STRONG ET AL., "A microelectrode array for real-time neurochemical and neuroelectrical recording in vitro," Sensors and Actuators, Elsevier Science B.V., Vol. A 91, p. 357-362, (2001).	
	BF	IAN G. BROWN ET AL., "Large Patterned Networks of Living Neurons," LDRD 2001 Annual Report, Accelerator and Fusion Research Division, Lawrence Berkeley National Laboratory, (March 25, 2002).	
	BG	PETER FROMHERZ, "Electrical interfacing of nerve cells and semiconductor chips," ChemPhysChem, Wiley-VCH-Verlag GmbH (Weingheim, Germany), Vol. 3, p. 276-284, (2002).	
↓	BH	A. ERLICHER ET AL., "Guiding neuronal growth with light," PNAS, Vol. 99 (No. 25), p. 16024-028, (December 10, 2002).	
/WHB/	BI	ASTRID A. PRINZ ET AL., "Effect of neuritic cables on conductance estimates for remote electrical synapses," J. Neurophysiol., The American Physiological Society (first published December 18, 2002), Vol. 89, p. 2215-2224, (2003).	

Examiner Signature	/William Beisner/	Date Considered	10/15/2007
--------------------	-------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/809,269
				Filing Date	03/24/2004
				First Named Inventor	Ian G. Brown
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	4	of	4	Attorney Docket Number	IB-1888

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/WHB/	BJ	STEPHEN M. LAWRENCE ET AL., "Fabrication and characteristics of an implantable, polymer-based, intrafascicular electrode," J. Neurosci. Methods, Elsevier B.V., Vol. 131, p. 9-26, (2003).	
/WHB/	BK	R. Alexander Kaul et al., "Neuron-Semiconductor Chip with Chemical Synapse between Identified Neurons," Physical Review Letters, The American Physical Society, Vol. 92, No. 3, p. 038102.1-038102.4, (2004).	

Examiner Signature	/William Beisner/	Date Considered	10/15/2007
--------------------	-------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.